RESULTS OF RESECTIONS OF THE KNEE IN ADVANCED LIFE PERFORMED FOR TUBERCULOSIS, AT THE TUEBINGEN CLINIC.[1]

The original material in this paper is based on 100 cases operated in the years 1875 to 1888. Of these cases, 46 were in the first ten years and 54 in the last four, showing the increased confidence generated by improving results. In reality all adult cases are included, the ages ranging from 20 to 60 years; 4 were over 60 years of age, and are considered by Schlüter as in this respect unique. There were 57 males and 43 females, the plus of males being attributable to traumatic influences as a cause. Of specified cases, 52 involved the right knee and 42 the left. The duration of the disease varied from 2 months to nearly 40 years. averaging fully 4 years.

CONDITION OF THE PATIENT ON ADMISSION.

Examination of the diseased joint showed:

Fistulæ in	20 Cases.
Tubercular ulcerations in	4 "
A flexed position in	40 "
Great painfulness in	22 "
A large accumulation of fluid in	24 "
Complete ankylosis (however, in only 3 or 4 was the mobility unimpeded) in	12 "
Very limited mobility (however, in only 3 or 4 was the mobility unimpeded) in	15 "
Evident swelling, as a rule, characteristically fusiform, in	97 "
Shortening, ½, 3, 5, 6 and 18 ctms. respectively, in	5 "

In all these cases of shortening the trouble began before completion of the individual's growth.

In 11 old cases there was subluxation of the tibia posteriorly, mostly with other conditions such as valgum-position and rotation outward indicating destruction of the joint.

[1]By Dr. O. Schlüter, *Deutsche Zeitschrift. f. Chirurgie*, 1890, bd. 30, hft. 4 and 5

In 5 cases there was fever, and in others evidence as follows of tuberculosis elsewhere: In 7 there were positive signs of phthisis, in 5 of bone disease, in 1 urogenital tuberculosis, in 1 lupus of face, and in 1 tuberculosis of mamma. In addition there were 16 with suspicious catarrh of apex, making a total of 31. Not less than 11 (35½%) of these died in the hospital or shortly after their discharge, and 3 were amputated. This makes 45.2% misresults in operated cases presenting demonstrable tuberculosis of other organs.

Operative procedure.—The essential is that the cut shall expose all parts of the joint and thus admit scrupulous removal of all that is diseased. Up to 1878 (7 cases) the subpatellar circular incision was practiced, as also in 9 special cases since. Otherwise Volkmann's cross-cut with sawing through of the patella. The latter is performed as follows: Thorough cleansing. Esmarch's constriction; incision through all the soft parts, joining the tip of the epicondyles with the middle of the patella. Sawing through of patella at bottom of incision. Retraction of lower half of patella with hook. The synovial membrane is prepared off as far as the tibia, the meniscuses being also removed; in like manner removal of the upper synovial. To reach the posterior portion, the knee is bent at an acute angle, the ligg. cruciata and lateralia are divided, and the leg is then pulled downward. If the posterior portion of the joint is still not quite accessible the bone-ends must now be sawed off. This is preferably done within the epiphysial limit, although not as necessarily so as in children. Care must be taken to remove from both condyles equally. The posterior portion of the femoral condyles is then trimmed off with knife or saw obliquely toward the synovial insertion, thus giving better access. If on readjusting the bone surfaces, the leg stands at an angle of 5 to 15°, it is no misfortune, as the gait is then apt to be better than with a fully extended leg. An artificial joining of the joint-ends was not the rule, as König does not find that reunion is thereby hastened nor that the adjustment of the dressing is rendered easier. His statistics, show that the final result is the same whether the ends are nailed or not. After all morbid tissue is removed the cavity is thoroughly washed out, the halves of the patella are joined by catgut stitches, and the skin-wound is closed. Formerly

Lister's dressing was applied, but now more modern styles. After a longer or shorter period,according to the progress of the cure, the antiseptic dressing is replaced by plaster; in this as a rule the first attempts at walking are made, and in 4 to 9 weeks the patient is dismissed some with a supporting apparatus. In 2 the synovial being healthy was spared and in 1 only the upper recessus was extirpated.

Pathological Observations.—In 69 cases there was disease of the bone, 13 times of the femur alone, 27 times of the tibia exclusively, and 21 times of both. The patella was the seat of a focus in 13, and in 5 of these exclusively. In the remaining 31, the process involved essentially the synovial, which was much thickened and covered with tubercular granulations. The cartilaginous covering of the bony surface was with few exceptions more or less destroyed.

Course of Convalescence.—Deducting amputations and deaths there remain 80 cases. Of these, 42 (52½%) healed without interruption, whilst the remaining 38 were delayed by suppuration, breaking out afresh of tubercular granulations, or necrosis of skin. Primary unions were few, perhaps 10 in all So far as determinable it took on an average about 2 mos. to the closure of the wound and beginning use of the extremity. Amongst 36 cases those treated by bone-suture averaged 58 days, those without, however, 69 days, showing some advantage in favor of the former. Age makes no particular difference. As in other clinics the average duration of hospital treatment in these cases has been reduced one-half since 1880 as compared with earlier experience.

Results.—Of 12 deaths, 6 were in consequence of the operation (2 from erysipelas, 1 each from carbolic poisoning, sepsis, tetanus and chloroform). Of 11 secondary amputations 3 were fatal Of the remaining 80, 64 were cured; the 16 not cured still presented fistulæ and 5 of these also had a loose knee.

Final results.—Of 70 he has reports up to April, 1889, showing that 44 remained perfectly cured; in 5 the fistulæ existing at their discharge healed later; 20 had died—15 from tuberculosis, 16 within two years of the operation or, to sum up the results to date in the 100 cases, 44 are well, 3 not cured, 11 amputated, 32 dead, 10 unknown. Whilst occasionally no influence or an unfavorable one is exerted on

other tubercular processes, much more frequently the influence seems to be favorable.

For comparisom he tabulates all accessible adult cases from other sources, 187 in number (64% males, 36% females). Cure uninterrupted in 30%. Erysipelas in 12 cases, none fatal. There were 29 amputations with 6 deaths.

For further comparison he presents summary statistics of 274 variously published cases under 20 years of age. Both old and young present the same percentum (63.8) of cures, whilst amputations and deaths are slightly more frequent in the old. His final conclusions are: Resection of the knee-joint for tuberculosis in adults secures to about 64% within half a year a useful leg, and later to a further small proportion also. It is therefore entirely commendable, especially since the duration of treatment has been so much abbreviated, and wherever practicable is decidedly preferable to mutilating amputation. WILLIAM BROWNING.

KOCHER ON THE TREATMENT OF OLD DISLOCATIONS OF THE SHOULDER-JOINT.[1]

This subject has recently been considered in the ANNALS (v. abstract of Knapp's article, October, 1890; p. 303–4). This only makes it more interesting to hear from such an authority in this field as Kocher.

Neglected dislocations of the shoulder are more frequent than of any other joint. This is largely owing to the fact that, according to statistics, this dislocation represents over one-half of all such injuries in the body. It is further due to the partial retention of function, so that the patient, and even physician, may not take the matter seriously. Where the patient's occupation does not require much use of the shoulder, it may even be resumed; but actively the arm is moved with the scapula or shoulder-girdle, the arm can at most be raised to the horizontal, and rotation is greatly limited. Possibly, motion may be much freer. Again, the doctor believes that he has accomplished the reduction when, in fact, he has not; or still holds to the old idea that

[1]Prof. T. Kocher, of Berne, *Deutche Zeitschrit f. Chirg.*, 1890. Bd. 30. IIft. 4 and 5.